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wherein the degree of association of the primary particles is 5 or less. This slurry for chemical mechanical polishing makes it possible to minimize erosion and scratching whenever a conductive material film is subjected to a CMP treatment.

IN THE CLAIMS:

Please amend claims 18, 22, and 23, and add new claims 26 – 37 as follows:

A2

18. (Amended) A method of manufacturing a semiconductor device, which comprises:

forming a wiring groove on a surface of an insulating film formed above a semiconductor substrate;

depositing a conductive material film on a surface of said insulating film including an inner surface of said wiring groove; and

subjecting said conductive material film to a chemical mechanical polishing by making use of a slurry for chemical mechanical polishing, which contains polishing particles comprising first colloidal silica particles whose primary particles have a diameter ranging from 5 to 20 nm, and second colloidal silica particles whose primary particles have a diameter larger than 20 nm, wherein the weight ratio of the first colloidal silica particles is in the range of 0.6 to 0.9 based on a total weight of said first and second colloidal silica particles to remove said conductive material film excluding a conductive material film portion which is buried in said wiring groove.

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22. (Amended) The method of manufacturing a semiconductor device according to claim 18, wherein said conductive material film is a laminate film composed of two or more layers comprising a conductive barrier film made of at least one kind of materials selected from the group consisting of TiN, Ti, Nb, W, WN, TaN, TaSiN, Ta, V, Mo, Zr and ZrN, and a wiring

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material film laminated on said barrier film, said laminate film being subjected to said chemical mechanical polishing by making use of said slurry for chemical mechanical polishing, which includes third particles formed of a material different from those of the first and second colloidal silica particles, to remove said conductive material film excluding a conductive material film portion which is buried in said wiring groove.

23. (Amended) A method of manufacturing a semiconductor device, which comprises:

forming a wiring groove on a surface of an insulating film formed above a semiconductor substrate;

depositing a conductive barrier film on a surface of said insulating film including an inner surface of said wiring groove;

depositing a wiring material film on said conductive barrier film to fill said wiring groove with said wiring material film;

subjecting said wiring material film to a chemical mechanical polishing to remove said wiring material film excluding a wiring material film portion which is buried in said wiring groove, said chemical mechanical polishing taking place, with the conductive barrier film on said insulating film being employed as a stopper, except for a conductive barrier film portion located inside said wiring groove; and

subjecting a conductive barrier film portion which is located on said insulating film excluding said wiring groove to a chemical mechanical polishing by making use of a slurry for chemical mechanical polishing, which contains polishing particles comprising first colloidal silica particles whose primary particles have a diameter ranging from 5 to 20 nm, and second colloidal silica particles whose primary particles have a diameter larger than 20 nm, wherein the

13
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A3
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weight ratio of the first colloidal silica particles is in the range of 0.6 to 0.9 based on a total weight of said first and second colloidal silica particles.

--26. (New) The method of manufacturing a semiconductor device according to claim 18, wherein said polishing particles are incorporated in said slurry at a ratio of 0.5 to 5% by weight.

27. (New) The method of manufacturing a semiconductor device according to claim 18, wherein said slurry further contains an oxidizing agent and an oxidation inhibitor.

A4
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28. (New) The method of manufacturing a semiconductor device according to claim 18, wherein said slurry further contains a surfactant.

29. (New) The method of manufacturing a semiconductor device according to claim 28, wherein said surfactant is dodecyl benzene sulfonate.

30. (New) The method of manufacturing a semiconductor device according to claim 21, wherein said conductive barrier film is subjected to a chemical mechanical polishing by making use of a slurry for chemical mechanical polishing, which contains polishing particles comprising colloidal silica particles whose primary particles have a diameter ranging from 5 to 30 nm, wherein the degree of association of the primary particles is 5 or less.

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31. (New) The method of manufacturing a semiconductor device according to claim 22, wherein said third particles are colloidal alumina particles.

32. (New) The method of manufacturing a semiconductor device according to claim 23, wherein said polishing particles are incorporated in said slurry at a ratio of 0.5 to 5% by weight.

33. (New) The method of manufacturing a semiconductor device according to claim 23, wherein said slurry further contains an oxidizing agent and an oxidation inhibitor.

34. (New) The method of manufacturing a semiconductor device according to claim 23, wherein said slurry further contains a surfactant.

35. (New) The method of manufacturing a semiconductor device according to claim 34, wherein said surfactant is dodecyl benzene sulfonate.

36. (New) The method of manufacturing a semiconductor device according to claim 23, wherein said slurry further contains third particles which are formed of a different material from that of the first and second colloidal silica particles.

37. (New) The method of manufacturing a semiconductor device according to claim 36, wherein said third particles are colloidal alumina particles.--

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